

CLAIMS

What is claimed is:

1 1. A multi-element field emission cathode, comprising:
2 a common carrier assembly; and
3 a plurality of sub-assemblies on the common carrier assembly, each sub-assembly
4 having a field emission array, the array having a selected area and electrical bond pads for
5 controlling emission current from the array.

1 2. The field emission cathode of claim 1 wherein the field emission array is
2 comprised of carbon-based emitters.

1 3. The field emission cathode of claim 1 wherein the selected area of the array is
2 circular, the area having a diameter in the range from about 10 micrometers to about 100
3 micrometers.

1 4. The field emission cathode of claim 1 wherein the width of a sub-assembly is
2 approximately 70 micrometers.

1 5. The field emission cathode of claim 1 wherein the number of sub-assemblies
2 mounted on the common carrier assembly is in the range from four to ten.

1 6. The field emission cathode of claim 1 wherein the number of sub-assemblies
2 mounted on the common carrier assembly is six.